

WHAT IS CLAIMED IS:

1. A dynamoelectric machine comprising:  
a stator core having a longitudinal axis and a length  
along said axis;

wire windings on said stator core; and

5 a rotor mounted for rotation relative to the stator  
core about said axis to interact magnetically with the  
stator core and windings, the rotor having a length along  
said axis;

10 wherein said length of the rotor is less than said  
length of the stator core.

2. A dynamoelectric machine as set forth in claim 1  
wherein the rotor is positioned entirely within the stator  
core.

3. A dynamoelectric machine as set forth in claim 2  
wherein the rotor is longitudinally centered in the stator  
core.

4. A dynamoelectric machine as set forth in claim 1  
further comprising a rotor shaft and two bearings  
supporting the rotor shaft for rotation, and wherein at  
least one of the bearings is positioned longitudinally  
5 within the stator core.

5. A dynamoelectric machine as set forth in claim 4  
wherein the rotor includes a recess for receiving said  
bearing.

6. A dynamoelectric machine as set forth in claim 1  
further comprising two endshields defining opposite ends of  
the machine, at least one of the endshields having a  
portion which extends to a longitudinal position within the  
5 stator core.

7. A dynamoelectric machine as set forth in claim 6 wherein at least one said endshield comprises a housing for mounting electronic components of the machine.

8. A dynamoelectric machine as set forth in claim 6 wherein at least one said endshield has a cavity for holding one or more capacitors.

9. A dynamoelectric machine as set forth in claim 1 further comprising a cooling jacket for removing heat from the machine, the cooling jacket being in heat transfer communication with the stator core along the entire said length of the stator core.

10. A dynamoelectric machine as set forth in claim 1 wherein said machine is a switched reluctance type machine.

11. A dynamoelectric machine comprising:  
a stator core having a longitudinal axis and a length along said axis;

wire windings on said stator core; and

a rotor mounted for rotation relative to the stator core about said axis to interact magnetically with the stator core and windings;

two endshields defining opposite ends of the machine, at least one of the endshields having a portion which extends to a longitudinal position within the stator core.

12. A dynamoelectric machine as set forth in claim 11 further comprising a rotor shaft and two bearings supporting the rotor shaft for rotation, and wherein at least one of the bearings is positioned longitudinally within the stator core.

13. A dynamoelectric machine as set forth in claim 12 wherein the rotor includes a recess for receiving said bearing.

14. A dynamoelectric machine as set forth in claim 11 further comprising a cooling jacket for removing heat from the machine, the cooling jacket being in heat transfer communication with the stator core along the entire said length of the stator core.

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15. A dynamoelectric machine as set forth in claim 11 wherein said machine is a switched reluctance type machine.